

4.10

Solving Systems of Equations by Graphing

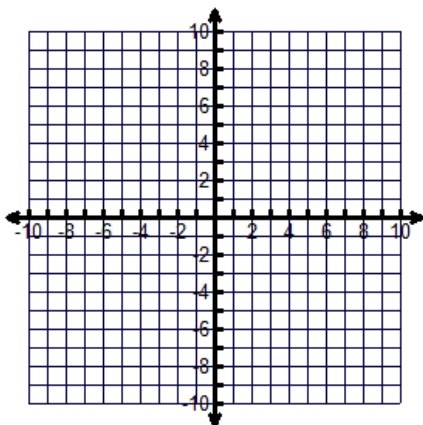
& Solving Equations

Name _____ Date _____ Period _____

Solve each system of equations by graphing. For each problem sketch each function $f(x)$ and $g(x)$ on one graph and label the intersecting points (solutions).

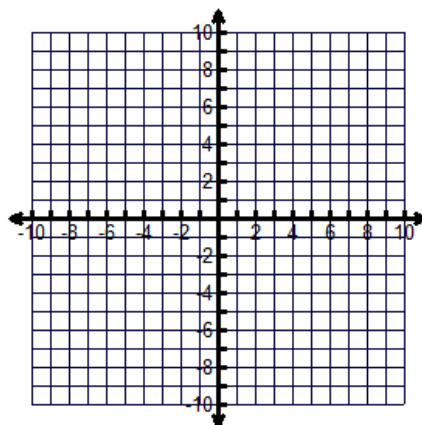
$$1. \quad f(x) = -2x + 4$$

$$g(x) = x^2 + 3$$



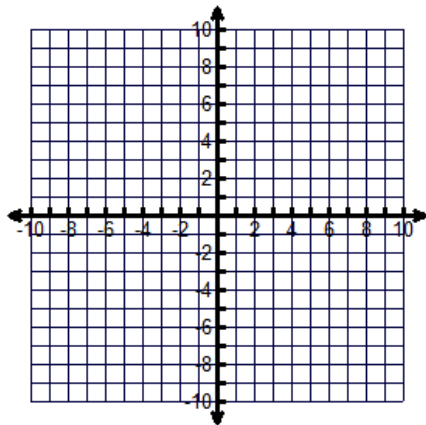
$$2. \quad f(x) = \frac{1}{3}x - 2$$

$$g(x) = x^3 - 3x^2 - 4x$$



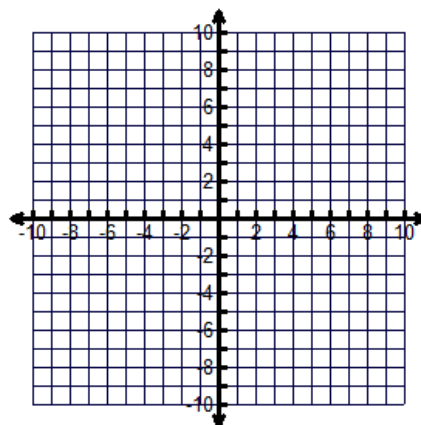
$$3. \quad f(x) = -\frac{5}{2}x + 3$$

$$g(x) = \frac{x-1}{2x+1}$$



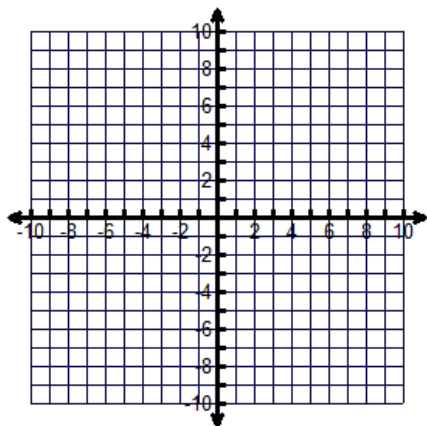
$$4. \quad f(x) = 4x - 3$$

$$g(x) = 3^{x-2} - 5$$



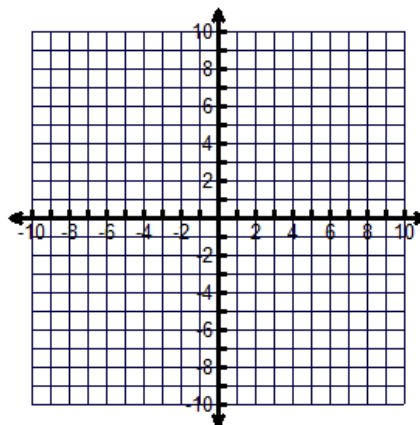
5. $f(x) = x^2 + 12x + 31$

$$g(x) = \frac{x-4}{x^2-4x+4}$$



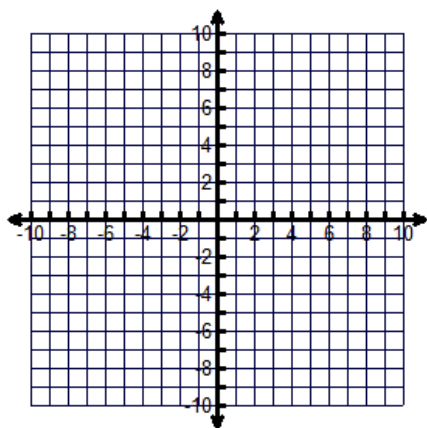
6. $f(x) = |2x-1| - 3$

$$g(x) = \frac{1}{2}x^3 - \frac{3}{2}x^2 - \frac{13}{2}x + \frac{15}{2}$$



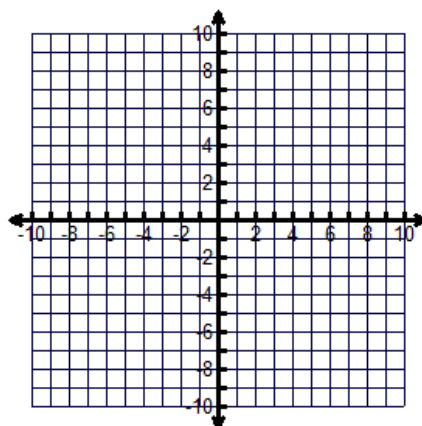
7. $f(x) = |x+4| + 3$

$$g(x) = 3^{x-2} + 1$$



8. $f(x) = |x+6|$

$$g(x) = \log(5-x) + 3$$



Solve each equation by using substitution.

9. $(x+3)^2 - 2(x+3) - 24 = 0$

10. $x^{\frac{2}{3}} + 9x^{\frac{1}{3}} + 20 = 0$

$$11. \frac{1}{(x+5)^2} - \frac{4}{x+5} = 12$$

$$12. x^5 + 4x^4 = 21x^3$$

$$13. \frac{1}{(x+2)^2} = \frac{1}{x+2} + 2$$

$$14. x^{\frac{4}{3}} - 6x^{\frac{2}{3}} + 9 = 0$$

Solve each equation for the specified variable.

$$15. \frac{l}{T^2} = \frac{g}{4\pi^2}, \text{ solve for } T$$

$$16. \frac{r_1}{r_2} = \sqrt{\frac{M_2}{M_1}}, \text{ solve for } M_1$$

$$17. \sqrt{b^2 - 4ac} = k, \text{ solve for } b$$

$$18. a_n = a_1 + (n-1)d, \text{ solve for } n$$